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FOREST INSECT AND DISEASE CONDITIONS ON THE CROW INDIAN RESERVATION, MONTANA

by

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An insect and disease evaluation of portions of the Crow Indian Reservation in southeastern Montana was made August 31 and September 1, 1971. This consisted of an aerial survey plus some ground observations. Several areas in Bighorn and Wolf Mountains were examined. The following is a synopsis of the findings:

DISEASE CONDITIONS

No serious forest disease problems were noted in the Bighorn or the Wolf Mountains. Several endemic diseases were noted and are listed below by geographical area.

Bighorn Mountains--Fir broom rust was found on scattered subalpine fir. This disease, caused by the rust fungus Melampsorella caryophyllacearum, has alternate spore stages on chickweed (species of Cerastium and Stellaria). The impact on volume production in Region 1 is not known; however, in Colorado the disease has reached epidemic proportions in some areas and has caused severe growth loss and mortality.

Spruce broom rust was found occasionally on Engelmann spruce. The rust fungus Chrysomyxa arctostaphyli causes this disease, and as indicated by the species, the alternate host is Arctostaphylos uva-ursi, the common Kinnikinnick.

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Western gall rust Endocronartium harknessii was found on ponderosa pine. This fungus requires no alternate host, but may be found on Castilleja spp., the Indian paintbrush. Gall rust can become of economic importance in young pine stands in which bole infections can girdle trees and cause deformities. Also, old bole infections on large trees are a source of quality defect and may serve as entrance courts for heart-rot fungi.

An unidentified canker disease was found on limber pine. Extensive laboratory tests need to be made to identify the cause. This disease was quite evident and appeared to be causing considerable damage, although it could not be regarded as serious.

Wolf Mountains--The forest of the Wolf Mountains is essentially a monoculture of ponderosa pine. No serious disease problems were found. Some gall rust was noted on the pines and on older individuals (150 plus years); red rot, caused by Polyporus anceps, was found on decked logs.

During this evaluation, no areas of root rot were detected either in the Bighorn or the Wolf Mountains. The ponderosa pine in the Wolf Mountains, however, does offer the possibility that Fomes annosus root rot could be a problem in the future. This fungus has caused catastrophic losses in pines in the southeastern United States, generally following logging or thinning. It would be wise to watch for possible infection centers.

INSECT CONDITIONS

Significant insect activity in the Bighorn Mountains was restricted to a bark beetle, Dryocoetes probably confuses Sw. (Scolytidae:Coleoptera). Numerous groups of 5 to 20 subalpine firs were killed. Control methods have not been developed for this insect. Other forest insects observed include a beetle, Conophthorus sp. (Scolytidae:Coleoptera), feeding on ponderosa cones, and a moth Dioryctria sp. (Pyralidae:Lepidoptera), attacking Douglas-fir cones. These insects are not causing appreciable damage. No evidence of Engelmann spruce beetle activity was detected in spruce stands.

Little insect activity was noted in the Wolf Mountains. Single fading ponderosa pines were observed scattered throughout the stand but no groups of any consequence were observed. Two groups of 10 to 20 old mountain pine beetle killed trees were examined but no newly attacked trees were found. Engraver beetles, probably Ips calligraphus (Germar) and I. pini (Say) were found attacking logs in two different log decks. These should not create a problem for the logs will soon be taken to the mill and sufficient slash exists to absorb remaining insects. Conophthorus beetles were also found feeding in many of the ponderosa pine cones.

In summary, no serious entomological problems were observed on the sections of the Crow Indian Reservation examined. What insect activity was observed could be considered endemic in nature.